

**Table 5-1**  
**Preliminary Screening of Remedial Alternatives**  
Riverside Industrial Park Superfund Site  
Newark, New Jersey

	Overall Effectiveness	Implement-ability	Cost	Screening Comments
<b>Waste</b>				
1 – No Action	Poor	Excellent	Low	Retained per NCP
2 – Removal and Off-Site Disposal	Excellent	Good	Medium	
<b>Soil/Fill</b>				
1 – No Action	Poor	Excellent	Low	Retained per NCP
2 – Institutional Controls and NAPL Removal	Poor-Fair	Excellent	Low	
3 – Institutional Controls, Engineering Controls, and NAPL Removal	Good	Good	Medium	
4 – Inst Controls, Engr Controls, Limited Removal, and NAPL Removal	Good-Excellent	Good	Medium-High	
5 – Inst Controls, Engr Controls, In-Situ Remediation and NAPL Removal	Good-Excellent	Poor-Fair	High	Retained, although implementability uncertain at this time
6 – Inst Controls, Removal/Off-Site Disposal, and NAPL Removal	Excellent	Poor	Very High	Not implementable (water management, offsets around underground utilities, and limited space between buildings)
7 – Inst, Ex-Situ Treatment/Replacement, Engr Controls and NAPL Removal	Good-Excellent	Poor	Very High	Not implementable (water management, offsets around underground utilities, and limited space between buildings)
<b>Groundwater</b>				
1 – No Action	Poor	Excellent	Low	Retained per NCP
2 – Institutional Controls, Containment at River, and Pump and Treat	Good	Good	High	
3 – Institutional Controls and In-Situ Remediation	Fair-Good	Good	Medium	
4 – Institutional Controls, P&T, and Targeted Periodic In-Situ Remediation	Good-Excellent	Good-Excellent	Medium	
5 – Inst. Controls, Containment at River, and Focused In-Situ Remediation	Fair	Poor	Medium	Not implemented (containment at river without a pumping system is not feasible)
6 - Institutional Controls and Site Containment	Poor	Poor	High	Not implementable (underground utilities/building proximity along western boundary)
7 – Institutional Controls, Containment at River, and MNA	Unknown	Poor	Medium	Not implemented (no MNA study conducted to determine if MNA is occurring at Site; containment at river without a pumping system is not feasible)
<b>Sewer</b>				
1 – No Action	Poor	Excellent	Low	Retained per NCP
2 – Removal and Off-Site Disposal	Excellent	Good	Low	
<b>Soil Gas</b>				
1 – No Action	Poor	Excellent	Low	Retained per NCP
2 – Inst Controls, Monitoring/Engr Controls, and Site-Wide Engr Controls	Good	Excellent	Low	
3 – Inst Controls, Site-Wide Engr Controls, and In-Situ Remediation	Good-Excellent	Poor-Fair	High	Retained, although implementability uncertain at this time
4 – Inst Controls, Site-Wide Engr Controls, and Removal/Disposal	Good	Poor	Very High	Not implementable (water management, offsets around underground utilities, and limited space between buildings)
5 - Inst Controls, Site-Wide Engr Controls, and Ex-Situ Treatment/Replacement	Good	Poor	Very High	Not implementable (water management, offsets around underground utilities, and limited space between buildings)

**Table 6-1**  
**Detailed Screening of Remedial Alternatives**  
Riverside Industrial Park Superfund Site  
Newark, New Jersey

	Overall Effectiveness					Implement-ability	Cost
	Overall Protection of Human Health/ Environment	Compliance with ARARs	Long-term Effectiveness and Permanence	Reduction of Mobility/ Toxicity/Volume by Treatment	Short-term Effectiveness		
<b>Waste</b>							
1 – No Action	Poor	Poor	Poor	Poor	Excellent	Excellent	Low
2 – Removal and Off-Site Disposal	Excellent	Excellent	Excellent	Good	Good	Good	Medium
<b>Soil/Fill</b>							
1 – No Action	Poor	Poor	Poor	Poor	Excellent	Excellent	Low
2 – Institutional Controls and NAPL Removal	Poor-Fair	Poor-Fair	Poor-Fair	Poor-Fair	Good-Excellent	Excellent	Low
3 – Institutional Controls, Engineering Controls, and NAPL Removal	Good	Good	Good	Fair	Good	Good	Medium
4 – Inst. Controls, Engineering Controls, Focused Removal, and NAPL Removal	Good-Excellent	Good-Excellent	Good-Excellent	Good	Good	Good	Medium-High
5 – Inst. Controls, In-Situ Remediation, Engineering Controls, and NAPL Removal	Good-Excellent	Good	Good-Excellent	Fair-Good	Fair	Poor-Fair	High
<b>Groundwater</b>							
1 – No Action	Poor	Poor	Poor	Poor	Excellent	Excellent	Low
2 – Institutional Controls, Containment at River, and Pump and Treat	Good	Good	Good	Good	Good	Good	High
3 – Institutional Controls and In-Situ Remediation	Good	Good	Fair-Good	Fair	Fair	Good	Medium
4 – Institutional Controls, P&T, and Targeted Periodic In-Situ Remediation	Good-Excellent	Good-Excellent	Good-Excellent	Good	Good	Good-Excellent	Medium
<b>Sewer</b>							
1 – No Action	Poor	Poor	Poor	Poor	Excellent	Excellent	Low
2 – Removal and Off-Site Disposal	Excellent	Excellent	Excellent	Good	Good	Good	Low
<b>Soil Gas</b>							
1 – No Action	Poor	Poor	Poor	Poor	Excellent	Excellent	Low
2 – Inst. Controls, Monitoring/Engineering Controls, and Site-Wide Engineering Controls	Good	Good	Good	Poor	Excellent	Excellent	Low
3 – Inst. Controls, Site-Wide Engineering Controls, and In-Situ Remediation	Good-Excellent	Good-Excellent	Good-Excellent	Good	Fair-Good	Poor-Fair	High

Table 2-4  
Preliminary Remediation Goals for Groundwater  
L&RR Superfund Site, North Smithfield, Rhode Island

Chemical of Potential Concern <sup>1</sup>	Risk Based Concentrations <sup>2</sup>			
	Based on Target ILCR = 10-6	Based on Target ILCR 10-5	Based on Target ILCR 10-4	Based on Target HQ = 1
Copper	NC	NC	NC	5.3E+02
Lead	---	---	---	---

Notes:

- 1. Soil concentrations are presented in units of milligrams per kilograms(mg/kg) for chemicals of concern identified for a visitor in the Baseline Human Health Risk Assessment.
- 2. Risk based concentrations are a calculated value, see Table X-x for calculation.  
The soil PRGs for carcinogenic (Incremental Lifetime Cancer Risk; ILCR) are based on a risk range of 1E-06 to 1E-04 and noncarcinogenic (Hazard Quotient; HQ) based on a target hazard index of one.
- 3. PRGs for lead were developed using the IEUBK model. See Table X for IEUBK model outputs.
- 4. ARARs are based on the New Jersey nonresidential direct contact soil remediation standard.
- 5. The Preliminary Remediation Goal (PRG) was selected according to the following hierarchy:

Table 2-4  
Preliminary Remediation Goals for Groundwater  
L&RR Superfund Site, North Smithfield, Rhode Island

PRG Based on ALM Model <sup>3</sup>	ARARs mg/kg <sup>4</sup>	Selected PRGs <sup>5</sup>	Basis for PRG
---	4.5E+04		
	8.0E+02		

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Preliminary Remediation Goals for Groundwater  
L&RR Superfund Site, North Smithfield, Rhode Island

Chemical of Potential Concern <sup>1</sup>	Risk Based Concentrations <sup>2</sup>			
	Based on Target ILCR = 10-6	Based on Target ILCR 10-5	Based on Target ILCR 10-4	Based on Target HQ = 1
Lead	---	---	---	---

- Notes:
- 1. Soil concentrations are presented in units of milligrams per kilograms(mg/kg) for chemicals of concern identified for an outdoor worker in the Baseline Human Health Risk Assessment.
  - 2. Risk based concentrations are a calculated value, see Table X-x for calculation.  
The soil PRGs for carcinogenic (Incremental Lifetime Cancer Risk; ILCR) are based on a risk range of 1E-06 to 1E-04 and noncarcinogenic (Hazard Quotient; HQ) based on a target hazard index of one.
  - 3. PRGs for lead were developed using the IEUBK model. See Table X for IEUBK model outputs.
  - 4. ARARs are based on the New Jersey nonresidential direct contact soil remediation standard.
  - 5. The Preliminary Remediation Goal (PRG) was selected according to the following hierarchy:

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Preliminary Remediation Goals for Groundwater  
L&RR Superfund Site, North Smithfield, Rhode Island

PRG Based on ALM Model <sup>3</sup>	ARARs mg/kg <sup>4</sup>	Selected PRGs <sup>5</sup>	Basis for PRG
784	8.0E+02		

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Chemical of Potential Concern <sup>1</sup>	Risk Based Concentrations <sup>2</sup>			
	Based on Target ILCR = 10-6	Based on Target ILCR 10-5	Based on Target ILCR 10-4	Based on Target HQ = 1
Lead	---	---	---	---

- Notes:
- 1. Soil concentrations are presented in units of milligrams per kilograms(mg/kg) for chemicals of concern identified for an utility worker in the Baseline Human Health Risk Assessment.
  - 2. Risk based concentrations are a calculated value, see Table X-x for calculation.  
The soil PRGs for carcinogenic (Incremental Lifetime Cancer Risk; ILCR) are based on a risk range of 1E-06 to 1E-04 and noncarcinogenic (Hazard Quotient; HQ) based on a target hazard index of one.
  - 3. PRGs for lead were developed using the IEUBK model. See Table X for IEUBK model outputs.
  - 4. ARARs are based on the New Jersey nonresidential direct contact soil remediation standard.
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PRG Based on ALM Model <sup>3</sup>	ARARs mg/kg <sup>4</sup>	Selected PRGs <sup>5</sup>	Basis for PRG
3292	8.0E+02		



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Chemical of Potential Concern <sup>1</sup>	Risk Based Concentrations <sup>2</sup>			
	Based on Target ILCR = 10-6	Based on Target ILCR 10-5	Based on Target ILCR 10-4	Based on Target HQ = 1
Lead	---	---	---	---

- Notes:
- 1. Soil concentrations are presented in units of milligrams per kilograms(mg/kg) for chemicals of concern identified for an construction worker in the Baseline Human Health Risk Assessment.
  - 2. Risk based concentrations are a calculated value, see Table X-x for calculation.  
The soil PRGs for carcinogenic (Incremental Lifetime Cancer Risk; ILCR) are based on a risk range of 1E-06 to 1E-04 and noncarcinogenic (Hazard Quotient; HQ) based on a target hazard index of one.
  - 3. PRGs for lead were developed using the IEUBK model. See Table X for IEUBK model outputs.
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PRG Based on ALM Model <sup>3</sup>	ARARs mg/kg <sup>4</sup>	Selected PRGs <sup>5</sup>	Basis for PRG
441	8.0E+02		